

Regano® in gestation and lactation diets improves sow enteric health and piglet performance

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Introduction

Regano® is an oregano essential oil (OEO)-based phytogetic feed additive with a spicy, aromatic flavor that stimulates sow appetite and feed intake. OEO has well documented antibacterial, antifungal and antioxidant activities and supports a healthy gut microflora (1). Several studies have shown that Regano® increases sow and litter productivity, with increased number of pigs weaned and improved litter health (2, 3). The objective of this experiment was to further investigate the effects of Regano® on sow intestinal health and associated improvements in litter enteric health and piglet performance.

Materials and Methods

On a 2,000 sow farm, 48 pregnant sows were enrolled in the study. Sows were divided equally into control (n=24) and test (n=24) groups with 12 control and 12 test sows in each of two farrowing rooms. Control sows were fed the farm's usual corn-soy gestation and lactation diets. Test sows received the farm's diets with Regano® EX (Ralco Animal Health) added at 0.6 lb/ton from d80 of gestation to farrowing. When sows were moved to the farrowing house, test sows received lactation diet containing 1 lb/ton Regano® EX. Litter performance was recorded. Enteric health of sows (n = 10/group) was assessed by quantitative fecal *E. coli* culture on d80 of gestation (before Regano®), on d7 post-birth, and at weaning (d27). Litters were scored as positive for scours if ≥1 piglet had diarrhea at any time during the lactation period.

Results

Results showed sows in both groups had similar numbers of *E. coli* at the start of the trial (d80 gestation). Decreased fecal shedding of *E. coli* was observed in the Regano® sows at d7 post birth and at weaning (P<0.05) compared with controls (Table 1).

Table 1. Quantitative fecal *E. coli* cultures.

Sampling day	<i>E. coli</i> in feces (CFU/g)	
	Control	Regano®
Day 80 gestation	1.11 x 10 ⁸	1.16 x 10 ⁸
Day 7 post-birth	3.05 x 10 ⁸	7.30 x 10 ⁷
At weaning	1.43 x 10 ⁷	2.29 x 10 ^{6*}

*P<0.05

Regano®-fed sows had fewer litters with scours (77.3% v. 95.8%), weaning weights were heavier (6.89 kg v. 6.54 kg), and preweaning mortality was reduced (9.7% v. 10.3%) compared to controls. On this farm, 'fall back' pigs not meeting weight and thriftiness criteria at weaning were removed. Regano®-fed sows had a 20.9% reduction in fall backs at weaning (12.5% v. 15.7%) compared to control sows.

Discussion

Regano® significantly reduced fecal *E. coli* shedding of test sows. Since most pathogens are transmitted from sow to offspring via fecal-oral route, this reduction may have improved litter performance. The steady reduction in *E. coli* in feces over time showed that gut health improved the longer the sows were fed Regano®. This confirms field experiences showing continued improvement in sow and litter health the longer sows receive Regano®. This study confirmed prior sow trials showing that Regano® significantly reduced the number of scouring litters and improved litter growth rate, resulting in higher weaning weight. With increasing pressure to reduce antibiotic use in livestock, further research and larger trials are warranted to investigate these observations.

References

1. Si, W et al., J Appl Microbiol. 100:296, 2006.
2. Cabrera, R et al., Proc AASV. 1:93, 2008.
3. Arizo-Nieto, C et al., J Anim Sci. 84: (Suppl.2):48, 2006.